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AUTHOR Brown, Gail W.; And Others
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ABSTRACT

A survey was conducted of 56 clinical child psychologists, 93 school psychologists, 24 family physicians, and 24 pediatricians concerning assessment methods and interventions for use with children with attention deficit disorders (ADD). Survey results are compared with results of a 1986 survey by R. Rosenberg and S. Beck to assess changes over 6 years. Data on use of the following assessment methods, by each group, are cited: interviews with the child, teachers, and parents; specific behavioral assessments; standardized tests; drawing tests; rating scales; apperception tests; and neuropsychological tests. Six groups of interventions were also examined: medication, behavior therapy, modification of school environment, cognitive behavior intervention, systems intervention, and psychotherapy. Results indicated that the diagnostic methods most commonly reported by all four groups were interviews and behavioral observations. School psychologists tended to modify the school environment and employ cognitive behavior therapy more frequently than did other groups. The survey also examined each group's work settings, level of education, workshops or classes on ADD attended, and extent of ADD children in their workload. (JDD)

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A Comparison of Evaluation Methods and Treatment Modalities for Attention Deficit Disorder by School Psychologists and Other Practitioners

Gail W. Brown, Brigham Young University

Richard Keene, Utah State Office of Education

Helene Middleton, Utah State Department of Health

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As the American public and the educational community become increasingly aware of the impact of attention disorders on the function and learning of children, Federal policy is mandating identification and intervention. In 1991, the United States Department of Education addressed these needs under Part B of the Individuals with Disabilities Education Act (Sec. 504), requiring that special education and related services be provided for all eligible children by state and local educational agencies.

Review of Literature

Research on attention disorders has shifted emphasis from the hyperactivity and impulsivity studies of the 70's and 80's to focus on inattention in the early 90's. Today's studies are investigating different syndromes within the attention deficit disorder classification, three of which are recognized as distinct types by DSM-IV:

314.00 Attention-Deficit/Hyperactivity Disorder, Predominantly Inattention Type

314.01 Attention-Deficit/Hyperactivity Disorder, Predominantly Hyperactive-Impulsive Type

314.01 Attention-Deficit/Hyperactivity Disorder, Combined Type

Syndromes

Attention-deficit disorder, predominantly inattention type is generally characterized by lethargy, anxiety, shyness, and social withdrawal. Children experiencing this disorder frequently daydream and perform poorly in sports, but because they are less aggressive than those with hyperactivity,

they are less rejected by their peers (Carlson, 1986). They may be learning disabled, experiencing deficits in focused attention and cognitive processing speed. They appear cognitively sluggish in responding to tasks, often focused on internal events rather than on external demands; thus they are typically much slower than other children in completing pencil-and-paper tasks such as the Coding and Symbol Search subtests on WISC-III. Their memory is less consistent than their peers', particularly on verbal performance. Often they experience difficulty with individual and small group activities at school. Parents perceive their children as dreamy, confused or lost in thought, slow-moving, apathetic, or unmotivated.

Attention-deficit disorder, predominantly hyperactive-impulsive type, in contrast, is usually characterized by aggressive conduct and bizarre behavior. Children with this disorder are noisy, disruptive, messy, irresponsible, and immature (Barkley, 1990); thus they are usually unpopular with peers and perform poorly at school. Their difficulty in following rules, according to Barkley (1984, 1990), may be due to insensitivity to consequences and reinforcements, punishments or both. Barkley suggests that neurological deficits may cause distraction or behavioral disinhibition in which the child fails to follow rules or instructions because of competition from highly rewarding activities.

Assessment

To assess attention deficits, Barkley (1990) advocates multiple information sources, as different methods tend to have compensating strengths and weaknesses. Seven assessment procedures have been used to provide relevant measures of attention: interviews, behavior observation, standardized tests, drawing assessments, rating scales, projective tests, and neuropsychological tests.

Mirsky (1987, 1989) designates four crucial components to be assessed: the capacity to focus on and perform tasks for a short time span, the capacity to encode and mentally manipulate information, the capacity to sustain attention over a longer period, and the capacity to shift attentional focus--flexibility. Other investigators have described similar criteria: alertness or arousal, selective or focused attention, sustained attention or vigilance, distractibility, and search (Egeth & Bevan, 1973; Hale & Lewis, 1979; Barkley, 1988).

Though researchers have recommended multiple measures and identified salient characteristics, only a few attempts have been made to determine which assessment and intervention strategies are used by practitioners. A seminal study by Rosenberg and Beck (1986) surveyed clinical psychologists and school psychologists on preferred assessment methods and treatment modalities for attention deficit children. Most of the respondents indicated that they used interviews, behavioral observations, and

standardized intelligence tests, with empirically derived rating scales being used less often, and specific tests of attention receiving little use. The procedures used by Rosenberg and Beck (1986) were expanded in the present study to survey family physicians and pediatricians as well as clinical and school psychologists on current methods of assessment and treatment.

Comparing results of this survey to those of Rosenberg and Beck (1986), the researchers examined apparent changes in assessment practices over the past six years. They focused on methods and instruments designed to identify specific subtypes of deficits in attention. Descriptions and sources of availability of the instruments listed on the survey were provided as a service to respondents.

Procedure

Copies of the survey were mailed to four random samples of 250 clinical child psychologists, school psychologists, family physicians and pediatricians. As the response rate from physicians was low, two more random samples of 100 family physicians and 100 pediatricians were added.

The survey requested the following demographic information: years of professional experience, educational level, number of cases of suspected ADD seen within the last year, and percentage of children assessed with ADD as the primary referral concern. Respondents were then asked to indicate those assessment methods and interventionst they used. Respondents indicated those they were currently using, those they would use

if available, and those with which they were unfamiliar. They were also asked to rate their degree of satisfaction on a three-point scale for instruments they did use. The following items were listed for their response:

Assessment. Seven major categories of assessment techniques were listed--interviews, behavior observation, standardized tests, drawing tests, rating scales, projective tests, and neuropsychological tests. Specific tests or instruments were listed under each category.

Interventions. Six categories of interventions were included: medication, behavior therapy, modification of school environment, cognitive behavior therapy, systems interventions, and psychotherapy. Specific techniques were listed under each category.

Current tests. Forty-two current tests and assessment techniques were cited.

Results

Responses were received from 93 school psychologists, 56 clinical child psychologists, 24 family physicians, and 24 pediatricians.

Demographics

Most of the school psychologists responding to the survey worked in the public schools (70%), with most of the clinical psychologists and family and pediatric physicians being employed in private practice (see Table 1).

[Insert Table 1 about here]

School psychologists responding to the survey generally had at least

post-baccalaureate education; Twenty-eight percent of them had doctoral degrees (see Table 2). The average number of workshops or classes on ADD attended by the respondents was 3.13 for school psychologists, 1.25 for clinical psychologists, 0.9 for family physicians, and 1.13 for pediatricians. School psychologists reported that 21% of their practice included children diagnosed as ADD, clinical child psychologists reported 23%, family physicians indicated 14%, and pediatricians noted 18%.

Diagnosis

Model preference. The general methods of diagnosing ADD indicated by respondents to this survey were compared with those indicated in the Rosenberg and Beck study (1986) (see Table 3). The diagnostic methods most commonly reported by all four groups were interviews and behavioral observations, as had been reported by Rosenberg and Beck. The use of interviews and projective tests did not differ significantly among groups, but behavioral observation, standardized tests, drawing tests, rating scales, and neuropsychological tests were used differently by the different categories of professionals. In every instance, school psychologists more commonly used these tests than any of the other practitioners.

School psychologists have changed their diagnostic practices little during the last five years, with the exception of the use of rating scales. The use of rating scales increased from 60% to 95%. Standardized test use was high with this group (96%), which was similar to the results of the earlier study.

Clinical psychologists increased their use of neuropsychological tests from 34% to 45%, but decreased use of all other assessment forms, most notably drawing tests (down from 81% to 64%) and projective tests (down from 56% to 38%). Along with school psychologists, clinical psychologists commonly used standardized tests rather than rating scales.

Physicians, like psychologists, preferred interviews and observations over the other assessment methods. Of the other tools, they used rating scales more than standardized tests. Pediatric physicians reported more neuropsychological testing than projective testing, but family physicians preferred projective methods.

Interviews. Respondents to the survey indicated varying types of interviews used in diagnosis of ADD children (see Table 5). Teacher interviews were reported often by school psychologists (98%) and clinical psychologists (77%), but less often by family physicians (58%) and pediatricians (38%). School psychologists reported using more parent interviews than on the 1986 Rosenberg and Beck study (96% over 90%) and more child interviews (92% over 80%). Clinical psychologists reported more teacher interviews (84% over 77%), but fewer child interviews (86% down from 94%).

[Insert Table 5 about here]

Behavioral assessments. Sites used most frequently for behavioral assessments in both this study and the precedent Rosenberg and Beck

(1986) study are reported in Table 6. Although the school and the home would seem the most appropriate settings for assessing child behavior, the office is most commonly used by pediatricians (96%), family physicians (92%) and clinical psychologists (80%). School psychologists reported fewer office observations than in the earlier study (34% down from 59%). The home setting was least frequently used by all groups.

[Insert Table 6 about here]

Standardized tests. Table 7 displays the standardized tests used by the respondents in diagnosing ADD. The WISC-R and WISC-III are the most frequently used, although for some of the groups their use is less than reported by Rosenberg and Beck in 1986. School psychologists increased their use of both WISC-R and WISC-III (from 82% to 95%), and decreased their use of the WRAT (from 44% to 27%) and the PIAT (from 30% to 16%). Clinical psychologists decreased their use of the WISC-R, WRAT, PPVT and PIAT, with the most notable decrease being with the WRAT (from 50% to 12%).

[Insert Table 7 about here]

Drawing tests. Types of drawing tests preferred by respondents in this study are reported in Table 8. Pediatricians and school and clinical psychologists used the Bender-Gestalt most frequently. Family physicians preferred the Draw-A-Person assessment. No significant change was reported in school psychologists' use of the Bender Gestalt from the 1986

study (79%) to the present (78%) or in their use of Draw-A-Person (58% in 1986; 57% in 1994).

[Insert Table 8 about here]

Rating scales. Table 9 reports the use of rating scales among the groups of professionals surveyed in this study. The rating scales used most often by all four professions were the two forms of the Achenbach and Conners. School psychologists increased their use of the teacher form of the Conners (from 22% in 1986 to 62% in 1994) and of the parent forms of the Conners (from 26% to 49%). The scales used the least among the participants were the Burks Behavior Rating Scale and the Behavior Evaluation Scale (BES).

[Insert Table 9 about here]

Apperception tests. As shown in Table 10, both groups of psychologists reported some use of apperception testing. School psychologists increased their use of the Thematic Apperception Test (TAT) from 20% in 1986 to 37% currently. Increases were also found in the use of the Children's Apperception Tests (CAT) (from 24% to 38%) and the Rorshach (from 14% to 18%). Clinical psychologists decreased use of the CAT (from 28% to 23%) and the Rorschach (from 37% to 32%).

[Insert Table 10 about here]

Neuropsychological tests. None of the family physicians surveyed in this study indicated that they used neuropsychological testing in diagnosing

and assessing ADD among their patients. Few of the school psychologists, clinical psychologists, and pediatric physicians used this form of testing; however, those who did use neuropsychological assessment indicated a preference for the Wechsler Memory Test and WRAML over the other instruments. Both school and clinical psychologists reported a slight decrease in the use of the Halstead-Reitan (see Table 11).

[Insert Table 11 about here]

Specific instruments. Respondents to the survey were asked to indicate their knowledge and use of specific assessment instruments in diagnosis of attention deficit problems as follows: (1) whether they used any of the forty-two instruments that have been reported to be useful in identifying these disorders, (2) whether they would use any of these instruments if they were available, and (3) whether they were familiar with the instruments.

Although many instruments have been developed for assessing ADD, most practitioners still relied on interviews and behavioral observations, though such procedures lack normative information, standardized interpretations, and uniform administration procedures. Most of the tests listed were used by less than 15% of the respondents.

Relatively few instruments were widely used. The WISC-R or WISC-III Freedom from Distractibility Factor were used by 53% of the respondents. The Conners teacher and/or parent rating scales were used by 52%; the Detroit Tests of Learning Aptitude were used by 17%; the Detroit Test of

Learning Aptitude--primary edition and the Barkley Home Situations Questionnaire were used by 16%; the Halstead Trail Making Tests A and B were used by 15%.

Intervention

The survey also requested information on practitioners' use of a large number of specific interventions. Six groups of interventions were examined: medication, behavior therapy, modification of school environment, cognitive behavior intervention, systems intervention, and psychotherapy (See Table 12). School psychologists tended to use modification of the school environment and cognitive behavior therapy more frequently than did clinicians or physicians.

Medication. Table 13 lists the medications most commonly used by the two groups of physicians surveyed in the study. Stimulant medication was reported used most frequently, followed by antidepressants. Occasionally physicians prescribed antiseizure, antipsychotic or tranquilizing medications.

[Insert Table 13 about here]

Environmental and behavioral interventions. As indicated in Table 14, all four groups reported the Resource Classroom as the most frequently used school intervention. Modifications in such areas as shifting the child from a self-contained classroom to resource--and the reverse, intervening with peers, changing teachers, or tracking the child were used more frequently by

the psychologists than by the physicians. School and clinical psychologists reported similar use of problem solving strategies, social skills training, and self-esteem training. Physicians tended to use self-esteem training more frequently than school modification and social or problem-solving instruction.

[Insert Table 14 about here]

As the data in Table 15 show, school psychologists and clinical psychologists reported similar use of problem solving strategies, social skills training, and self-esteem training. Family and pediatric physicians were more likely to employ self-esteem training than problem solving or social skills interventions, but on the whole they used cognitive behavior therapy less often than did either group of psychologists.

[Insert Table 15 about here]

Regarding systems intervention, school psychologists indicated that they used the school system as the primary intervention, with family systems and consultation less frequently employed. The other three groups of professionals listed the family as the primary unit for systems intervention (see Table 16).

[Insert Table 16 about here]

Summary

This study surveyed 93 school psychologists, 56 clinical child psychologists, 24 family physicians, and 24 pediatricians on their use of methods of assessment and intervention with attention deficit children.

Results were compared with those found in a 1986 study by Rosenberg and Beck.

Assessment

The four components of attention deficit most frequently assessed by respondents to the survey were distractibility, impulsivity, hyperactivity, and sustained attention. This study revealed that for physicians and psychologists involved with school children, a significant percentage of professional time was spent with attention deficit disabilities, yet relatively little professional development time had been devoted to learning about this problem area. School psychologists and clinical child psychologists reported that more than 20% of their practice included children with major attention deficit problems. Family physicians and pediatricians reported 14% and 18% of their practice respectively. However, on the average, school psychologists had attended three workshops dealing with ADD, but most clinical psychologists, family physicians and pediatricians had attended only one.

All four groups indicated that interviews and behavioral observations were the methods most frequently used in diagnosing and assessing children with attention problems, a finding in accord with the study by Rosenberg and Beck in 1986. Both groups of psychologists used teacher interviews more extensively than did the physicians. Both psychologists and physicians depended heavily on parent interviews. Child interviews, though high, showed some decrease over the Rosenberg and Beck figures among clinical

psychologists, but increased among school psychologists. Child interviews were high among both physician groups. Most behavioral observations were conducted by clinical psychologists, family physicians and pediatricians in the practitioners' offices rather than in the home or the school. School psychologists reduced their dependence on office observations, instead conducting most of their observations in the school setting.

Clinical psychologists favored standardized tests over rating scales; both groups of physicians reported that they were likely to use rating scales rather than standardized tests. School psychologists used standardized tests and rating scales at almost equally high rates--96% and 95%. The WISC-R and WISC-III were the most frequently used standardized tests, as they were in 1989. Their use increased, while the use of most other tests decreased. The rating scales most commonly used by all four groups of professionals were the two forms of the Achenbach and the Conners. Apperception Tests were used by roughly a third of the psychologists and almost none of the physicians. Limited use of neuropsychological testing was reported, most of it among clinical psychologists and pediatric physicians. School psychologists and family physicians were more likely to use projective than neuropsychological methods.

In response to the request for information about their knowledge and use of 42 specific instruments, 53% of the respondents indicated that they used the WISC-R or WISC-III Freedom from Distractibility factor, and 52%

indicated the Conners teacher and/or parent rating scales; less than 20% used any of the other instruments. Although many instruments are available that are capable of providing normative information, standardized interpretations, and uniform administration procedures, most practitioners relied on the less precise methods of interview and behavioral observation.

Intervention

Physicians surveyed in the study indicated that they used stimulant medication most frequently in treating ADD children. Antidepressants were also identified. Occasionally physicians used antiseizure, antipsychotic and tranquilizing medication.

School psychologists tended to modify the school environment and employ cognitive behavior therapy more frequently than did those in the other professions. Modifications in such areas as shifting the child from a self-contained classroom to resource--and the reverse, intervening with peers, changing teachers, or tracking the child were used more frequently by the psychologists than by the physicians. School and clinical psychologists reported similar use of problem solving strategies, social skills training, and self-esteem training. Physicians tended to use self-esteem training more frequently than school modification and social or problem-solving instruction. School psychologists indicated that they used the school system as the primary unit of systems intervention, with family and consultation used slightly

less. The other three groups of professionals listed the family as the primary source of systems intervention.

TABLE 1
Sites of Employment by Profession

	Profession			
	School Psych.	Clinic Psych.	Family Phys.	Ped. Phys.
Public Schools	70%	7%	0%	0%
Com. M.H.	0%	7%	0%	0%
Clinic	1%	4%	8%	0%
Public Hosp.	0%	7%	0%	8%
Private Prac.	24%	18%	21%	71%
Private Hosp.	1%	4%	8%	0%
Other	1%	20%	21%	0%

TABLE 2
Level of Education by Profession

	Profession			
	School Psych.	Clinic Psych.	Family Phys.	Ped. Phys.
Masters	13%	2%	0%	0%
Masters + 30 Hrs.	59%	0%	0%	0%
Ph.D.	28%	98%	0%	0%
M.D.	0%	0%	62%	52%
M.D. + Special	0%	0%	38%	48%

TABLE 3
General Methods of ADD Diagnosis by Profession

	Profession			
	School Psych.	Clinic Psych.	Family Phys.	Ped. Phys.
Interventions Interviews	99%	91%	92%	96%
Behavioral Observation	99%	86%	92%	96%
Standardized Tests	96%	80%	42%	46%
Drawing Tests	86%	64%	21%	29%
Rating Scales	95%	70%	50%	62%
Proj. Tests	47%	38%	4%	4%
Neuropsych. Tests	22%	45%	0%	8%

TABLE 4
Components of Attention Assessed

	Profession			
	School Psych.	Clinic Psych.	Family Phys.	Ped. Phys.
Alertness	39%	40%	34%	41%
Sustained Attention	73%	73%	60%	83%
Searching	18%	19%	27%	13%
Impulsivity	92%	87%	70%	95%
Selective Attention	64%	67%	47%	58%
Distractibility	94%	87%	78%	83%
Hyperactivity	88%	87%	78%	92%

TABLE 5
Interview Type by Profession

	Professions and Dates of Study					
	1986 School Psych.	1992 School Psych.	1986 Clinic Psych.	1992 Clinic Psych.	1992 Family Phys.	1992 Ped. Phys.
Develop. History	--	88%	--	86%	88%	96%
Parent Interview	91%	96%	93%	91%	86%	96%
Child Interview	80%	92%	83%	86%	94%	96%
Teacher Interview	94%	98%	58%	77%	84%	38%

TABLE 6
Site of Behavioral Observation by Profession

	Professions and Dates of Study					
	1986 School Psych.	1992 School Psych.	1986 Clinic Psych.	1992 Clinic Psych.	1992 Family Phys.	1992 Ped. Phys.
Office	59%	34%	89%	80%	92%	96%
School	94%	98%	67%	64%	29%	17%
Home	32%	25%	31%	30%	25%	17%

TABLE 7
Standardized Tests by Profession

	Professions and Dates of Study					
	1986 School Psych.	1992 School Psych.	1986 Clinic Psych.	1992 Clinic Psych.	1992 Family Phys.	1992 Ped. Phys.
WISC-R/WISC-III	82%	95%	86%	77%	33%	42%
Stanford-Binet	--	81%	--	14%	13%	29%
WRAT	44%	27%	50%	12%	1%	2%
PPVT	30%	28%	32%	23%	4%	13%
PIAT	30%	16%	28%	16%	0%	4%
K-ABC	24%	30%	18%	16%	0%	0%
W.J.Cognitive	--	15%	--	16%	4%	8%
W.J. Achievement	--	51%	--	27%	4%	13%
Diff. Ability Test	--	4%	--	7%	0%	4%

TABLE 8
Drawing Tests by Profession

	Professions and Dates of Study					
	1986 School Psych.	1992 School Psych.	1986 Clinic Psych.	1992 Clinic Psych.	1992 Family Phys.	1992 Ped. Phys.
Bender Gestalt	79%	78%	64%	45%	8%	25%
Draw-A-Person	58%	57%	48%	39%	13%	0%
Visual Motor (VMI)	--	56%	--	39%	4%	4%

TABLE 9
Rating Scales by Profession

	Professions and Dates of Study					
	1986 School Psych.	1992 School Psych.	1986 Clinic Psych.	1992 Clinic Psych.	1992 Family Phys.	1992 Ped. Phys.
Behavior Eval. (BES)	--	29%	--	4%	4%	0%
Conner Rating Profile	--	47%	--	25%	13%	38%
Burk's Behavior	--	28%	--	11%	4%	0%
CBCT (Achenbach)	--	54%	--	52%	13%	21%
CBCP (Achenbach)	--	51%	--	49%	13%	21%
Conners (Teacher)	22%	62%	42%	36%	21%	42%
Conners (Parent)	26%	49%	35%	38%	25%	42%

TABLE 10
Projective Tests by Profession

	Professions and Dates of Study					
	1986 School Psych.	1992 School Psych.	986 Clinic Psych.	1992 Clinic Psych.	1992 Family Phys.	1992 Ped. Phys
Rorschach	14%	18%	38%	32%	0%	0%
TAT	20%	37%	32%	30%	4%	4%
CAT	24%	38%	28%	23%	0%	4%

TABLE 11
Neuropsychological Tests by Profession

	Professions and Dates of Study					
	1986 School Psych.	1992 School Psych.	1986 Clinic Psych.	1992 Clinic Psych.	1992 Family Phys.	1992 Ped. Phys.
Halstead-Reitan	8%	4%	19%	13%	0%	0%
Luria-Nebraska	7%	5%	11%	9%	0%	4%
Wechsler Memory	--	11%	--	23%	0%	9%
Denman Memory	--	1%	--	0%	0%	0%
WRAML	--	6%	--	20%	0%	0%

TABLE 12
General Method of Intervention by Profession

	Profession			
	School Psych.	Clinic Psych.	Family Phys.	Ped. Phys.
Medication	96%	92%		
Beh. Therapy	61%	59%	46%	38%
Mod. of Sch Environ	84%	63%	67%	58%
Cog. Behavior	83%	73%	54%	42%
Sys.Interven.	93%	84%	79%	79%
Psychotherapy	27%	48%	25%	41%

TABLE 13
Type of Medication by Professional Group

	Profession	
	Psychologists	Physicians
Stimultant Meds	83%	83%
Antidepressant	21%	42%
Antipsychotics	0%	4%
Tranquilizers	4%	0%
Antiseizure	4%	4%

TABLE 14

Modification of School Environment by Profession

	Profession			
	School Psych.	Clinic Psych.	Family Phys.	Ped. Phys.
Resource	63%	52%	58%	38%
Self-Cont. Class	39%	48%	33%	33%
Peer Intervention	41%	48%	17%	17%
Tracker	37%	34%	42%	42%
Change in Teacher	41%	38%	29%	20%

TABLE 15
Type of Cognitive Behavioral Therapy by Profession

	Profession			
	School Psych.	Clinic Psych.	Family Phys.	Ped. Phys.
Problem Solving	58%	59%	33%	17%
Soc. Skills Training	66%	59%	38%	25%
Self Esteem	60%	57%	46%	38%

TABLE 16
Systems Interventions by Profession

	PROFESSION			
	School Psych.	Clinic Psych.	Family Phys.	Ped. Phys.
Family	68%	82%	75%	75%
School	73%	57%	46%	54%
Consultation	67%	54%	42%	54%

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